

Sierra Wave® 120-Watt Solar Collector #9590

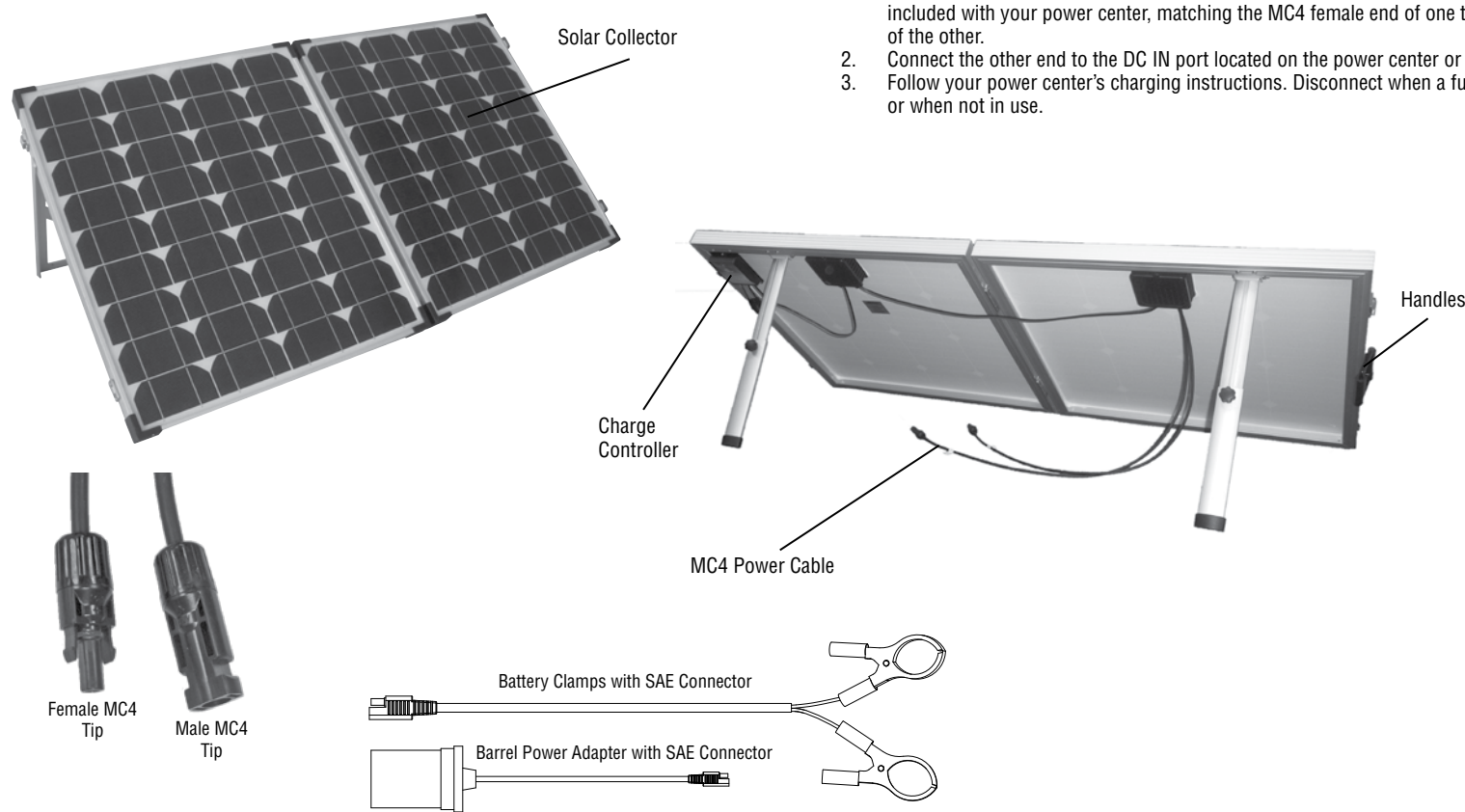
IMPORTANT SAFEGUARDS

- Read all instructions before operating and keep for reference. Only use as directed
- To reduce the risk of electric shock, do not submerge the unit or its accessories in any liquid.
- Unit is weather resistant but not waterproof. Bring indoors during heavy rain, snow or wind. If fixed-mounted, cover it up during heavy rain, snow or wind.
- To avoid shock do not connect to a power center in wet conditions.
- Protect solar panels from scratching. Do not place other objects on top of panels to avoid damage.
- Do not use abrasive cleaning products to clean solar panels
- Store in a clean dry place when not in use
- When using the 10A Charge Controller, follow instructions carefully to avoid personal injury and explosion or other damage to batteries, the solar panel, or Charge Controller
- Not intended for use by children. Administer close supervision when children are nearby

DANGER

The Charge Controller must be used when charging 12V sealed lead acid and AGM vehicle batteries. Failure to do so may cause a battery fire, explosion and personal injury. Extreme caution must be taken to make certain all connections are secure between the charge controller, solar collector, and load connected; and that the battery cables are attached to the correct polarity terminals.

PARTS IDENTIFICATION



SOLAR COLLECTION & CHARGING

This portable 120-Watt Solar Collector features high-efficiency monocrystalline solar cells and includes MC4 cables to quickly connect to many Sierra Wave power centers. Also includes a built-in 10A solar charge controller with over-charge protection, battery cables to charge 12V batteries, and a barrel power adapter to charge other portable electronic devices.

Two Solar Collectors may be chained together in parallel for 240-watts of power using #9502 Chainable Connector.

Solar Collector Set-Up:

1. Unfold the Solar Collector by opening the side latches.
2. Adjust the height of the KICK STAND SUPPORTS on the back so that the SOLAR PANELS are directly facing the sun with maximum exposure. Adjustment will be required throughout the day as the sun travels across the sky. Obstructions from trees and buildings will affect efficiency.

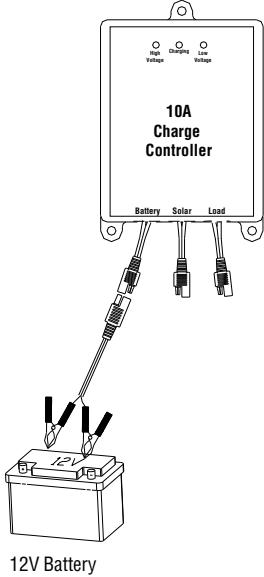
Charging a Power Center (sold separately):

We recommend the #9675 1000-Watt Energy Center, #9680 1500-Watt Energy Center or #9690 1500-Watt Incremental Energy Center as a storage device (Power Center) for collected power. Read all instructions included with the Power Center or any other device you choose (based on compatibility). When using a Sierra Wave Power Center, the Charge Controller is not required.

- CAUTION:** Do not make cable connections to the solar collector or power center when under load.
1. Connect the MC4 POWER CABLES on the Solar Collector to the SOLAR CHARGE CABLE included with your power center, matching the MC4 female end of one to the MC4 male end of the other.
 2. Connect the other end to the DC IN port located on the power center or other device.
 3. Follow your power center's charging instructions. Disconnect when a full charge is achieved or when not in use.

Charging a 12V DC Auxiliary Battery (sold separately):

1. Place the battery on a stable surface close to the Solar Collector.
2. Connect the SAE connector on the BATTERY CLAMPS to the SAE connector on the CHARGE CONTROLLER port labeled BATTERY.
3. Connect the red (+) and black (-) BATTERY CLAMPS to the corresponding red (+) and black (-) battery terminals.
4. Monitor the charging status using the CHARGE CONTROLLER LED INDICATORS. See chart below.
5. A LOAD output of no more than 10A/180 watts may be connected to the CHARGE CONTROLLER to directly operate from the 12V battery. Function is controlled by the CHARGE CONTROLLER to ensure battery safety. Check your devices rated wattage before using this function.



Charge Controller LED Indicators

High Voltage Protection: If the 12V battery reaches a pre-determined high voltage level of 14V-14.5V DC, the green High Voltage LED Indicator will illuminate. Solar charging to the battery will automatically stop until the battery reaches a safe operating voltage.

Charging In Process: When the Solar Collector is connected, the yellow Charging LED Indicator will illuminate as long as adequate solar energy is provided.

Low Voltage Protection: If the 12V battery reaches a pre-determined low voltage level of 11V ±0.3V the red Low Voltage LED Indicator will illuminate. Operation of the load will automatically stop until the battery reaches a safe operating voltage.

Charging Electronic Devices

Directly charge Sierra Wave power banks or electronic devices like tablets, smartphones, cameras, GPS equipment, and tools. Your device's 12V own charger is required for this function. IMPORTANT: Charging laptops is not supported with this method because they require 19-21V and higher wattage. Use the a Sierra Wave Solar Link 240, 1000 or Energy Center 1500 to charge these items.

1. Read all instructions included with the device you wish to charge to confirm compatibility. Power requirements must not exceed Solar Collector rated output.
2. Place your device on a stable surface next to the Solar Collector.
3. Connect the included BARREL POWER ADAPTER to the CHARGE CONTROLLER port labeled BATTERY on the Solar Collector.
4. Connect your device's 12V Vehicle Charger into the BARREL POWER ADAPTER and the other end into your device.
5. The LEDs on the CHARGE CONTROLLER and your 12V Vehicle Charger should be illuminated.
6. If your device will not charge, check that all connections are secure and there is sufficient sunlight. Contact Aervoe for additional assistance if needed.
7. Disconnect the Solar Collector when fully charged or not in use. Do not leave unsupervised.

NOTE: User is responsible for confirming compatibility. Aervoe Industries, Inc. is not responsible for damage to user's device. Read and understand all operating instructions and specifications prior to use.

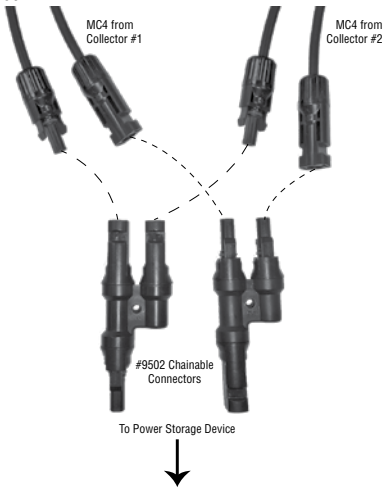
Pairing Two Solar Collectors:

Allows two 120-Watt Solar Collectors to be connected in parallel to increase charge rate. Verify your Power Center or 12V auxiliary battery can accommodate these power ratings.

OPTION #1: Charging Accessory Power Centers

(Requires #9502 Chainable Connectors - 2-piece set sold separately)

1. Set up both SOLAR COLLECTORS as outlined previously. They should be close together but not obstructing sunlight to each other.
2. From each SOLAR COLLECTOR, select a female MC4 POWER CABLE and connect them to the #9502 CHAINABLE CONNECTOR with 2 male ends.
3. Repeat with the remaining male MC4 POWER CABLES connecting them to the CHAINABLE CONNECTOR with 2 female ends.
4. Connect the SOLAR CHARGE CABLE included with the Power Center to the CHAINABLE CONNECTORS matching male to female connectors. NOTE: Sierra Wave Power Centers come with the Solar Charge Cable. Other devices may not.
5. Connect the other end to any storage device such as the Solar Link 240 Power Center or other device.



OPTION #2: Charging 12V Batteries

(Requires a standard 24-36" SAE x SAE extension cable available at your local electronics retailer)

1. Set up both SOLAR COLLECTORS as outlined previously. They should be close together but not obstructing sunlight to each other.
2. Connect the SAE EXTENSION CABLE to the port labeled BATTERY on the CHARGE CONTROLLER.
3. Connect the included BATTERY CLAMP to the SAE EXTENSION CABLE.
4. Securely attach the red (+) and black (-) BATTERY CLAMPS to the corresponding 12V battery matching terminal posts.

DANGER: Use caution when connecting the battery clamps to the terminal posts. Do not cross connect. The Charge Controller must be used for this operation. Risk of fire, explosion, and injury may result if all components are not connected correctly.

TECHNICAL INFORMATION

SPECIFICATIONS	
SOLAR COLLECTOR	120-watt monocrystalline CE, FCC approved
POWER OUTPUT	15-18V DC/6.8A max (working) 19-21.5V DC max (no load)
OPERATING TEMPERATURE	32° - 120°F (use in colder temperatures will result in ineffective charging)
WEIGHT	25 lbs. (11.3 kg)
DIMENSIONS	Unfolded: 52.28" x 1.337" x 24.85" (133 x 3.5 x 63 cm) Folded: 26.14" x 2.756" x 24.85" (66.4 x 7 x 63 cm)
ACCESSORIES	1 - Battery clamps (36") 1 - Barrel power adapter (36") 1 - Carrying case
10A CHARGE CONTROLLER (MOUNTED)	Maximum Input: 20V DC ~ 10A/180 watts Operating Temperature: 32°-120°F Over Charge Protection: 14V DC (+0.5V) Over Discharge Protection: 11.0V DC (+/-0.3V) DC Output (load): 10A max
CE	

CHARGING DATA	Actual results will vary depending on available sunlight and the device being charged
#9690 Sierra Wave 1500W Incremental Energy Center (500Wh configuration)	1 panel: 7-8 hours
#9675 Sierra Wave Solar Link 1000 Power Center	1 panel: 6-8 hours
#9695 Sierra Wave PowerPro 200 Power Center	3-4 hours for a full charge
#6994 Max Burton Power Center ₁₀₀	3-4 hours for a full charge
12V Vehicle batteries	Reference the battery manufacturer's specifications. Example: 40 amp/hour battery at 5.5 amps charge rate = 8-10 hours. Chaining 2 panels together = 4-6 hours.
Portable electronic devices (12V DC or lower)	Reference your device's operating specifications.



AERVOE INDUSTRIES, INC.
Gardnerville, NV 89410 • 1-800-227-0196
www.aervoe.com • mailbox@aervoe.com

Sierra Wave is a registered trademark of Aervoe Industries, Inc.